AMENDMENTS TO THE CLAIMS

Please amend claim 1.

1. (currently amended) A three-dimensional image measuring apparatus comprising:

an XYZ shaft transfer means mounted onto a base member;

a work stage having first and second guides and a guide transfer apparatus mounted to the base member, for moving a measuring object to a measuring position and thereafter supporting it and having a predetermined reference surface set at a side thereof;

an image obtaining means ~~in which it is moved toward~~ moving along X, Y and Z shafts by the XYZ shaft transfer means, ~~scans~~ scanning a grating image by the frequency of N times to ~~a~~ one side of the measuring object and, at the same time, to the other side of the measuring object supported and fixed to the work stage, obtaining ~~obtains~~ the ~~changed~~ grating image changed by the one side of the measuring object by N times ~~and alternately, scans the grating image by the frequency of N times to the other side of the measuring object~~, ~~obtains~~ and obtaining the ~~changed~~ grating image changed by the other side of the measuring object by N times;

a light emitting means mounted to a side of the image obtaining means for generating and emitting light with a predetermined wavelength; and

a control unit which, by controlling the work stage and the XYZ shaft transfer means, irradiates light generated from the light emitting means mounted to a side of the image obtaining means to the reference surface set the side of the work stage, thereafter receives the reflected light image through the image obtaining means, measures a vertical distance, thereby maintaining a focus distance between the measuring object and the image obtaining means constantly, and receives the changed grating image obtained from the image obtaining means, thereby producing the three-dimensional image.

2. (previously presented) The three-dimensional measuring apparatus according to claim 1, wherein the XYZ shaft transfer apparatus is applied any one between a linear motor or a ball screw in order to transfer the image obtaining apparatus toward X, Y and Z shafts, respectively.

3. (previously presented) The three-dimensional measuring apparatus according to claim 1, wherein

the first guide is installed to the base member to be fixed and has a predetermined reference to a side thereof;

the second guide is installed in order to be transferred according to the size of the measuring object on the basis of the first guide; and

the guide transfer apparatus is installed that the first and second guides, respectively, are crossed at right angles and for transferring the second guide on the basis of the first guide.

4. (previously presented) The three-dimensional measuring apparatus according to claim 1, wherein said guide transfer apparatus is a ball screw.

5. (previously presented) The three-dimensional measuring apparatus according to claim 1, the image obtaining means comprises:

a projection portion which produces a grating image through a light source emitting light and a grating, in which it is installed to a lower side of the light source for receiving the light emitted from the light source and moved by a grating transfer apparatus, and penetrates the produced grating image through a projection optical system installed to a lower side of the grating;

a distributor, which is installed to a lower side of the projection portion, distributes the grating image irradiated through a projection optical system of the projection portion through first and second mirrors transferred by a mirror transfer apparatus and distributes the grating image through third and fourth mirrors which are installed to be horizontal to the left/right side of the first and second mirrors and first and second filters; and

an imaging unit which is installed to a lower side of the distributor, reflects horizontally the changed grating image in which it is penetrated through the first and second filters of the distributor and irritated to the measuring object and then reflected, through an imaging mirror, and obtains the changed grating image through an imaging lens and an imaging device to a camera.

6. (previously presented) The three-dimensional measuring apparatus according to claim 5, wherein the grating is adapted as a liquid crystal grating.

7. (previously presented) The three-dimensional measuring apparatus according to claim 5, wherein the grating transfer apparatus of the projection portion is adapted as a PZT(piezoelectric) actuator.

8. (previously presented) The three-dimensional measuring apparatus according to claim 5, wherein a first mirror and a second mirror of the distributor are crossed and formed at the center lines of each inclined mirror.

9. (previously presented) The three-dimensional measuring apparatus according to claim 5, wherein first and second mirrors of the distributor are adapted as a triangle mirror, respectively.

10. (previously presented) The three-dimensional measuring apparatus according to claim 5 or 6, wherein the mirror transfer apparatus is adapted as one among an air cylinder, a linear motor and a ball screw.

11. (previously presented) The three-dimensional measuring apparatus according to claim 5, wherein first and second mirrors of the distributor are adapted as a mirror rotation mirror.

12. (original) The three-dimensional measuring apparatus according to claim 11, wherein the apparatus further comprises a rotation apparatus for rotating the rotation mirror with a predetermined angle.

13. (previously presented) The three-dimensional measuring apparatus according to claim 12, wherein said rotation apparatus is adapted as a galvano mirror meter.

14. (previously presented) The three-dimensional measuring apparatus according to claim 1, wherein a laser pointer is used as the light emitting means.

Please add new claims 15-20.

15. (new) An apparatus for measuring an image of an object, the apparatus comprising:

a light source emitting light;

a diffraction grating disposed to receive the light emitted from the light source and to produce a grating image from the light;

a distributor disposed to receive the grating image and to distribute the grating image to the object, the distributor including:

a first mirror distributing the grating image to a first side of the object, and

a second mirror distributing the grating image to a second side of the object, the second side of the object being opposite the first side of the object; and

an imaging unit receiving the grating image reflected by the first side of the object and the second side of the object,

wherein the light emitting source, the diffraction grating, the distributor, and the imaging unit are arranged substantially on a straight line.

16. (new) The apparatus according to claim 15, further comprising:

a third mirror disposed at a first side of the distributor to receive the grating image from the first mirror and to distribute the grating image to the first side of the object; and

a fourth mirror disposed at a second side of the distributor to receive the grating image from the second mirror and to distribute the grating image to the second side of the object,

wherein the first side of the distributor is opposite the second side of the distributor.

17. (new) The apparatus according to claim 15, wherein the imaging unit alternately obtains the grating image from the first side of the object and the second side of the measuring object.

18. (new) The apparatus according to claim 15, further comprising:

an XYZ transfer device for moving the apparatus along X, Y and Z axes.

19. (new) The apparatus according to claim 15, further comprising:

a base member; and

a work stage mounted on the base member for moving the object to a measuring position.

20. (new) The apparatus according to claim 15, further comprising:

a control unit for measuring the image of the object by removing shadow regions and saturation regions from the grating image received by the imaging unit using phase values obtained from the first side of the object and the second side of the object, respectively.